

REMARKS

Reconsideration of the application in light of the above amendments and the following remarks is respectfully requested.

Status of the Claims

Claims 1-7 and 9-12 are pending. Claim 8 was canceled by previous amendment. Claims 1, 5, 6, 11 and 12 have been amended. No new matter has been added.

Applicant appreciatively acknowledges the courtesy and effort extended by the Examiner to his representative, Richard J. Katz, during a telephonic Examiner Interview conducted on June 1 and 4, 2007. During the Interview the pending claims and the reference to Pankinaho was discussed. The Examiner acknowledged that contrary to what is written in the December 12, 2006 Office Action (*see item 4, page 3*), Pankinaho fails to disclose the feature of a “second function being periodic movement of said planar element,” as recited in independent claims 1, 11 and 12.

Applicant respectfully notes that the amendments to claims 1, 5, 6, 11 and 12 do not require a further search by the Examiner, as their subject matter was present in the claims when previous searches were performed. Thus, the amendments do not necessitate new grounds of rejection. Therefore should the Examiner issue another Office Action rejecting the pending claims based on art not already of record, Applicant submits that it would be improper to deem such Office Action a final action.

Rejection under 35 U.S.C. §103

Claims 1-3, 5 and 10-11 stand rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 6,140,966 to Pankinaho in view of U.S. Patent No. 6,927,732 to Mähringer. Applicant respectfully traverses the rejection.

In the Office Action, the Examiner contends that Pankinaho discloses most of the features of independent claims 1 and 11 including a “second function being periodic movement of said planar element.” The Examiner relies on Mähringer as disclosing a piezoelectric element attached to the planar antenna.

As discussed above, the Examiner has conceded in the June 1 and 4 telephonic Interview that Pankinaho fails to disclose all the features for which the Examiner relies on Pankinaho as disclosing. Accordingly, Applicant submits that the Examiner has failed to meet the burden of establishing a *prima facie* case of obviousness over independent claims 1 and 11. Claims 2-3, 5 and 10 depend from claim 1. Therefore, the Examiner has also failed to meet the burden of establishing a *prima facie* case of obviousness over claims 2-3, 5 and 10. Reconsideration and withdrawal of the rejection is requested.

Claim 4 stands rejected under 35 U.S.C. § 103(a) as unpatentable over Pankinaho and Mähringer in view of U.S. Patent No. 5,361,077 to Weber. Applicant respectfully traverses the rejection.

The Examiner relies on Weber as disclosing “two piezoelectric elements on an antenna.” (Detailed Action, item 5, page 9.) Claim 4 depends from claim 1, and recites its own features in addition to the features of its base claim. Applicant submits that Weber neither discloses, nor suggests, those features discussed above to be missing from Pankinaho and Mähringer. Therefore,

the combination of Pankinaho, Mähringer and Weber neither discloses, nor suggests, the features of claim 4. Thus, the Examiner has also failed to meet the burden of establishing a *prima facie* case of obviousness over claim 4. Reconsideration and withdrawal of the rejection is requested.

Claims 6-7 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Pankinaho and Mähringer in view of U.S. Patent No. 5,410,749 to Siwiak et al. ("Siwiak"). Applicant respectfully traverses the rejection.

The Examiner relies on Siwiak as disclosing "first and second feeders, which may be conductive materials" and "primary receiver element circuits which comprise . . . a local oscillator." (Detailed Action, item 6, page 9 and 10.) Claims 6-7 depend from claim 1, and recite their own features in addition to the features of their base claim. Applicant submits that Siwiak neither discloses, nor suggests, those features discussed above to be missing from Pankinaho and Mähringer. Therefore, the combination of Pankinaho, Mähringer and Siwiak neither discloses, nor suggests, the features of claims 6-7. Thus, the Examiner has also failed to meet the burden of establishing a *prima facie* case of obviousness over claims 6-7.

Further with respect to the rejection of claim 6, Siwiak discloses that:

[f]irst and second feeders 308, 310 extend from the second surface 320 of the planar antenna element 302 through apertures 316, 312, respectively, in the dielectric material 304 and in the ground plane 314, and thence to the primary receiver element circuits 328, 326.

Siwiak, column 3, lines 55-59 (emphasis added). Siwiak clearly discloses that the first and second feeders are isolated from the ground plane by apertures 316 and 312, respectively. In contrast, claim 6 recites that the piezoelectric element and the second piezoelectric element are "attached to the ground plane." Also, Applicant respectfully disputes the Examiner's contention

that Siwiak's first and second feeders, which are conductive elements for feeding signals from an antenna to receiver circuits, could be understood by a person of ordinary skill in the art to be piezoelectric elements.

Further with respect to the rejection of claim 7, Siwiak discloses a local oscillator and associated circuitry "to provide a first down conversion receiver function in a manner well-known to one of ordinary skill in the art." (Siwiak, column 3, lines 65-68.) A person of ordinary skill in the art would know that a local oscillator used in a receiver's front end circuitry is incapable of providing the physical vibrations necessary to induce an alarm from a piezoelectric element coupled to a vibration oscillator, as recited in claim 7.

Reconsideration and withdrawal of the rejection is requested.

Claim 9 stands rejected under 35 U.S.C. § 103(a) as unpatentable over Pankinaho and Mähringer in view of JP Patent No. 06224824 to Suzuki. Applicant respectfully traverses the rejection.

The Examiner relies on Suzuki as disclosing a "receiver circuit [which] emits an acoustic wave." (Detailed Action, item 5, page 9.) Claim 9 depends from claim 1, and recites its own features in addition to the features of its base claim. Applicant submits that Suzuki neither discloses, nor suggests, those features discussed above to be missing from Pankinaho and Mähringer. Therefore, the combination of Pankinaho, Mähringer and Suzuki neither discloses, nor suggests, the features of claim 9. Thus, the Examiner has also failed to meet the burden of establishing a *prima facie* case of obviousness over claim 9. Reconsideration and withdrawal of the rejection is requested.

Claim 12 stands rejected under 35 U.S.C. § 103(a) as unpatentable over Pankinaho and Weber in view of Siwiak. Applicant respectfully traverses the rejection.

The Examiner relies on Weber as disclosing an overmoded acoustically coupled antenna, that includes two thin film piezoelectric resonators that are acoustically coupled. (Detailed Action, item 8, page 14.) Claim 12 depends from claim 1, and recites its own features in addition to the features of its base claim. Applicant submits that neither Weber nor Siwiak disclose, nor suggest, those features discussed above to be missing from Pankinaho. Therefore, the combination of Pankinaho, Weber, and Siwiak neither discloses, nor suggests, the features of claim 12. Thus, the Examiner has also failed to meet the burden of establishing a *prima facie* case of obviousness over claim 12.

Additionally, Weber discloses a radiator that is fed through a substrate 26 which mechanically oscillates. Conversion from electrical to mechanical mode, and vice versa, is accomplished by piezoelectric elements 34, 37 that are located on the opposite sides of the substrate. Although, Weber uses the wording “acoustic coupling,” this usage is a misnomer because sound waves are not generated by Weber.

Reconsideration and withdrawal of the rejection is requested.

Discussion of the Mähringer Reference

Mähringer discloses a piezo-ceramic layer 4 attached to a shaped membrane 2, and a shaped membrane crease 3 which encompasses the shaped membrane. (Mähringer, column 1, lines 50-54; Fig. 2.) Because of the shaped membrane crease 3, the piezo-ceramic layer in Mähringer can induce vibrations in only that portion of the radiating plane encompassed within the shaped membrane

crease. This would be understood by a person of ordinary skill in the art because the crease mechanically isolates the remainder of the radiating plane. Present independent claim 1 recites that "the periodic movement occurs in a **substantial portion of the planar element beyond the location of the piezoelectric element.**" This feature is similarly recited in independent claims 11-12.

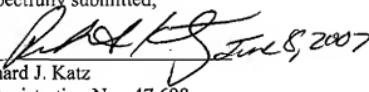
CONCLUSION

Each and every point raised in the Office Action dated December 12, 2006 has been addressed on the basis of the above amendments and remarks. In view of the foregoing it is believed that claims 1-7 and 9-12 are in condition for allowance and it is respectfully requested that the application be reconsidered and that all pending claims be allowed and the case passed to issue.

If there are any other issues remaining which the Examiner believes could be resolved through a Supplemental Response or an Examiner's Amendment, the Examiner is respectfully requested to contact the undersigned at the telephone number indicated below.

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Respectfully submitted,

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